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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/006,166	12/04/2001	Pavel I. Lazarev	A-71153/AJT	2857

7590 10/13/2005

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EXAMINER

HON, SOW FUN

ART UNIT	PAPER NUMBER
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1772

DATE MAILED: 10/13/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/006,166

Applicant(s)

LAZAREV, PAVEL I.

Examiner

Sow-Fun Hon

Art Unit

1772

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 01 August 2005.
2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-5, 18-21, 34-36 and 49-51 is/are pending in the application.
4a) Of the above claim(s) _____ is/are withdrawn from consideration.
5) ☐ Claim(s) _____ is/are allowed.
6) ☒ Claim(s) 1-5, 18-21, 34-36 and 49-51 is/are rejected.
7) ☐ Claim(s) _____ is/are objected to.
8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____

- 4) ☒ Interview Summary (PTO-413)
Paper No(s)/Mail Date 9/16/05.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____

DETAILED ACTION

Response to Amendment

Rejections Withdrawn

1. The 35 U.S.C. 112, 2nd paragraph and 35 U.S.C. 103(a) rejections have been withdrawn due to Applicant's amendment and the new 35 U.S.C. 112 rejections set forth below.

Interview Summary

2. A telephone interview with Applicant on September 16, 2005 did not result in resolution of all issues. Hence this new Office action. Due to the new grounds of rejection, the Office action is accordingly made non-final.

New Rejections

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

3. Claims 1-5, 18-21, 34-36, 49-51 are rejected under 35 U.S.C. 112, first paragraph, because the specification, while appearing to be enabling for the specific example in Figure 2 (written description in specification, page 5, lines 4-15) wherein all the specific parameters of the liquid crystal are given for the specific display to meet the present claims as defined by Applicant, does not reasonably provide enablement for other displays with different liquid crystal. The specification does not appear to enable

Art Unit: 1772

any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the invention without undue experimentation, commensurate in scope with these claims. The interference extremum of transmission or reflection appears to depend on other optical parameters such as the ordinary refractive index, extraordinary refractive index, ratio of ordinary refractive index to extraordinary index, as seen in the written description of Fig. 2 (specification, page 5, lines 4-15), aside from the optical thickness, and to also depend on the wavelength of incident light since light has a particle-wave duality. There is no discussion of exactly how the extremum, which is a point in space, has been calculated and detected in real time and space. Applicant discusses the use of known algorithms for calculating multi-layer interference systems, to calculate the number of layers in the display and the choice of optical parameters, but does not disclose any such calculation and subsequent real-time detection of the extremum at the exit of the panel, for a specific layer of liquid crystal. The only subject matter that appears to be enabled is the written description of Fig. 2 (specification, page 5, lines 4-15), shown on the next page. Applicant is therefore advised to review MPEP 2164.08 [R-2].

Figure 2 is a cross-sectional view of a display in accordance with one embodiment of the present invention. The display's layer's materials and thickness are selected to provide maximum brightness and contrast of the displayed image. Referring to the Figure, the positioning of the functional layers in the display is symmetrical relative to the liquid crystal layer 12. In one embodiment, the display cell had spaced parallel glass plates 7 having a thickness of 1.1 mm and refractive index $n = 1.5$, layers of ITO material 8 with thickness of $0.08 \mu\text{m}$ and refractive index $n = 1.85$, transparent layers of SiO_2 9 with thickness of $0.1 \mu\text{m}$ and refractive index $n = 1.75$, optically anisotropic layers 10 which are aligned films of blue-violet composition in the weight ratio of 3.2 (Optiva, Inc., 377 Oyster Point Blvd., #13, South San Francisco, CA 94080 V017) with thickness of $0.4 \mu\text{m}$ and having optical parameters $n_o = 1.91$, $n_e = 1.48$, $k_o = 0.722$, films of polyimide 11 with thickness of $0.04 \mu\text{m}$ and refractive index $n = 1.52$ and the layer of liquid crystal material (MLC-6806-000 twisted by 240°

Any inquiry concerning this communication should be directed to Sow-Fun Hon whose telephone number (571)272-1492. The examiner can normally be reached Monday to Friday from 10:00 AM to 6:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Harold Pyon, can be reached on (571)272-1498. The fax phone number for the organization where this application or proceeding is assigned is (571)273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should

Application/Control Number: 10/006,166

Page 5

Art Unit: 1772

you have questions on access to the Private PAIR system, contact the Electronic

Business Center (EBC) at 866-217-9197 (toll-free).

S. Hon

Sow-Fun Hon

10/05/05

Harold Pyon

HAROLD PYON

SUPERVISORY PATENT EXAMINER

1772

10/11/05